

REMARKS

Claims 1-22 are pending in the application. Claims 1-22 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,995,930 to Hab-Umbach et al. ("Hab") for the reasons set forth on pages 2-3 of the Office Action.

In general, the independent claims 1, 9 and 15 are directed to systems and methods for rescoring an N-best hypotheses that is generated by a speech recognition system. The N-best hypotheses comprises the N most-likely text sequences (transcriptions) representing a spoken utterance that is decoded by the speech recognition system. In the invention of claims 1, 9 and 15, text-to-speech (TTS) synthesis is employed to generate a synthetic waveform that is used for rescoring the N-best hypothesis generated by the speech recognition system.

More specifically, a synthetic waveform is first generated for each of the N-best text sequences. Then, the synthetic waveform for each of the N-best text sequence is compared with the original waveform to determine the synthetic waveform that is closest to the original waveform. Then, the N-best text sequence, whose corresponding synthetic waveform which is most acoustically similar to the original speech waveform, is selected for output.

Advantageously, this "N-best rescoring" method employs the synthetic waveforms of the N text sequences as additional knowledge sources for the speech recognition process without having to integrate such the speech synthesis framework into the speech recognition framework.

It is respectfully submitted that Hab does not anticipate the invention of claims 1, 9 and 15. For instance, Applicants find nothing in Hab that discloses or even remotely suggests a

protocol for re-scoring an N-best hypothesis generated by a speech recognition system, much less a method for rescoring that comprises generating a synthetic waveform for each of the N-best text sequences (using TTS) and comparing each of the synthetic waveforms to the original file to select one of the N-best hypotheses.

In stark contrast, Hab is directed to a method for recognizing (decoding) spoken utterances by generating a plurality of "test signals" by sampling the original waveform and comparing the "test signals" with one or more series of "reference signals" that are associated with words. The "reference signals" are embodied in a tree framework that organizes the vocabulary in a tree such that any branch in the tree has a number of reference signals (representing phonemes) associated therewith, and vocabulary words (series of phonemes) are associated with tree branch junctions and branch ends. A spoken utterance is decoded by parsing the tree and storing the score results (see, e.g., Hab, Col 1, line 60-col 2, line 7; Claim 1).

Thus, it is abundantly clear to those skilled in the art that the Hab process of comparing acoustic feature data (test signals) of an original waveform with reference acoustic data (reference signals) to perform recognition is fundamentally distinct, and radically different, from the claimed process of generating synthetic waveforms for each of the N-best decoded sequences, and using the synthetic waveforms to rescore the N-best. In other words, Hab protocol does not compare acoustic data of synthetic waveforms generated for each of the N-best decoding results with the acoustic data of the original waveform to thereby select a desired one of the N decoding

results, as essentially claimed in claims 1, 9 and 15. Accordingly, claims 1, 9 and 15 are patentably distinct and patentable over Hab.

Claims 2-8 depend from claim 1, claims 10-14 depend from claim 9 and claims 16-22 depend from claim 15. As such, these claims are patentably distinct and patentable over Hab for at least the reasons given above for their respective base claims 1, 9 and 15. Accordingly, the withdrawal of the rejections under 35 U.S.C. § 102(e) is respectfully requested.

Early and favorable consideration by the Examiner is respectfully urged. Should the Examiner believe that a telephone or personal interview may facilitate resolution of any remaining matters, it is requested that the Examiner contact Applicants' undersigned attorney.

Respectfully submitted,



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